

WHAT IS CLAIMED IS:

1. A system for testing a database oriented software application that interacts with a database comprising:
  - an editor module for creating Structured Query Language (SQL) queries;
  - 5 a data repository for storing database structures and SQL queries;
  - a rule creator module for creating patterns of relational structure to be detected in the database;
  - a database analyzer module for building test suites and executing the test suits using a plurality of tests; and
- 10 a monitor module for monitoring the interaction of the software application with the database, wherein the monitor module comprises means for profiling the software application and means for extracting SQL queries for building test suits.
2. The system of claim 1, wherein the monitor module comprises:
  - 15 a proxy driver for recording and logging calls to objects in the software application; and
  - a monitor console for managing the monitoring of the interaction of the software application with the database, for presenting recorded results, and for exchanging recorded data with the software application.
- 20 3. The system of claim 2, wherein the proxy driver creates a proxy connection object that wraps around an original connection object, whenever the database oriented software application requests creation of a connection to the database.
- 25 4. The system of claim 3, wherein the proxy connection object comprises one or more of the group statements and result-set.
- 30 5. The system of claim 2, wherein the monitor module comprises a graphical user interface and a message exchange server module for exchanging messages between the proxy driver and the graphical user interface.

6. The system of claim 2, wherein the proxy driver comprises a logger object module for sending monitored information to one or more of a text file, compressed file, and a graphical user interface.

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7. The system of claim 1, wherein the plurality of tests comprises two or more of the group of a database structure test for comparing database structure with a recorded pattern; a rule test for verifying the database against a design rule; a query load test for verifying database performance and scalability in respect to SQL statements; a statistics generator module for collecting information about database engine properties and database structure; a spell checking test for verifying correct spellings in the database; a data pollution test for verifying that no incorrect or poorly-formed data exists in the database; an on line database structure test for comparing database structures to each other and reporting any differences; and a data value test for verifying that a single value returned by a database query remains in defined limits.

10 8. A method for testing a database oriented software application that interacts with a database, the method comprising:

15 creating Structured Query Language (SQL) queries;  
20 storing database structures and SQL queries in a data repository;  
creating patterns of relational structure to be detected in the database;  
building test suites and executing the test suits using a plurality of tests; and  
monitoring the interaction of the software application with the database, wherein the monitoring step comprises profiling the software application and extracting SQL queries for  
25 building test suits.

30 9. The method of claim 8, wherein the monitoring step comprises:  
recording and logging calls to objects in the software application by a proxy driver;  
managing the monitoring of the interaction of the software application with the  
database;

presenting recorded results; and  
exchanging recorded data with the software application.

10. The method of claim 9, further comprising creating a proxy connection object  
5 that wraps around an original connection object, whenever the database oriented software  
application requests creation of a connection to the database.

11. The method of claim 9, wherein the monitoring step comprises exchanging  
messages between the proxy driver and a graphical user interface by a message exchange  
10 server module.

12. The method of claim 9, further comprising sending monitored information to  
one or more of a text file, compressed file, and a graphical user interface.

15 13. The method of claim 8, wherein the step of executing the test suits comprises  
comparing database structure with a recorded pattern.

14. The method of claim 8, wherein the step of executing the test suits comprises  
verifying the database against a design rule.

20 15. The method of claim 8, wherein the step of executing the test suits comprises  
verifying database performance and scalability in respect to SQL statements.

16. The method of claim 8, wherein the step of executing the test suits comprises a  
25 collecting information about database engine properties and database structure.

17. The method of claim 8, wherein the step of executing the test suits comprises  
comparing database structures to each other and reporting any differences.

30 18. The method of claim 8, wherein the step of executing the test suits comprises

verifying that a single value returned by a database query remains in defined limits.

19. The method of claim 8 further comprising generating reports from the database.

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20. The method of claim 19 further comprising:  
specifying in a graphical user interface (GUI) information about the database;  
specifying in the GUI the data to be included in the report;  
generating a report template; and  
executing the report template to create the report based on data retrieved form the database.

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21. The method of claim 20 further comprising the step of specifying in the GUI a filter for filtering out unwanted data.

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22. The method of claim 20 further comprising the step of automatically determining relations between data sets.

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23. The method of claim 22, wherein the step of automatically determining relations comprises inferring relations by using one or more of key, type, and name.

24. The method of claim 22 further comprising the step of specifying in the GUI information for creating an HTML template.

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25. The method of claim 22 further comprising the step of specifying in the GUI where to publish the report.